

# Managing Pain in Osteoarthritis And Rheumatoid Arthritis



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## Learning Objectives

Upon completion of this course, you should be able to:

- Explain the importance of adequate pain management
- Discuss nonpharmacologic options for the management of arthritis pain in adults
- Discuss pharmacologic options for the management of arthritis pain in adults

**For information on how to earn CE credit, see inside front cover. To view disclosure information, see page 5.**

**Course ID: AB0328**

**P**ain is a major determinant of quality of life for people with osteoarthritis (OA) and rheumatoid arthritis (RA), which affect more than 20 million and 2.5 million Americans, respectively. Despite receiving appropriate treatment for the underlying disease, many people experience pain that impairs physical and psychological function.<sup>1</sup>

No treatments cure and few alter the natural course of arthritis, whereas typical therapies (analgesics) have the potential for toxicity. Consistent with a biopsychosocial approach, pharmacologic and nonpharmacologic therapies, accompanied by patient education, are all important components of a treatment plan for pain associated with arthritis.<sup>1</sup>

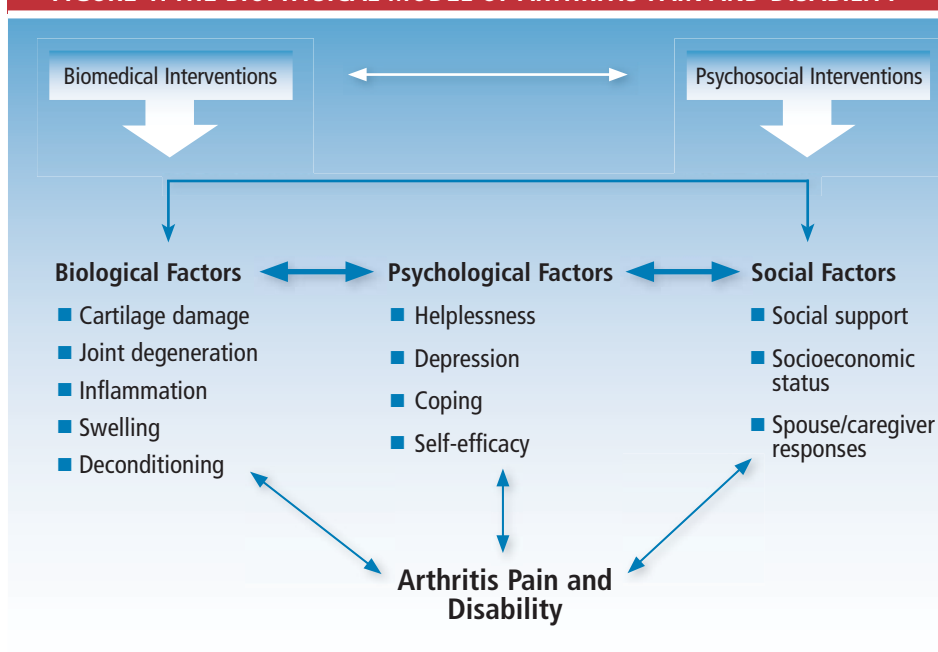
### Arthritis: Overview

Arthritis pain can result from more than 100 rheumatic diseases, which cause pain, stiffness, and swelling of joints as well as damage to supporting structures.<sup>2</sup> The most common types of arthritis, OA and RA, are among the most prevalent chronic illnesses and leading causes of disability in the United States.<sup>2,3</sup> OA affects more than 21 million Americans and accounts for 46 million physician visits and 3.7 million

hospital admissions annually.<sup>1,4,5</sup> RA affects more than 2.5 million Americans and results in 9 million physician visits and 250,000 hospitalizations per year.<sup>1,6</sup>

Arthritis has a substantial economic impact. The Centers for Disease Control and Prevention (CDC) estimates total costs associated with arthritis to be almost \$65 billion annually. Direct medical costs represent about one quarter of the total. Indirect

**FIGURE 1. THE BIOPHYSICAL MODEL OF ARTHRITIS PAIN AND DISABILITY**



Adapted from Keefe FJ, Bonk V. Psychosocial assessment of pain in patients having rheumatic diseases. *Rheum Dis Clin North Am.* 1999;25:81-103

costs, mainly due to lost wages, make up the rest. The CDC also estimates that by the year 2020, 60 million Americans, or almost 20% of the population, will be affected by some form of arthritis, and nearly 12 million will experience activity limitation.<sup>4</sup>

RA in particular has notable economic implications for individual patients and for society. People with RA have 3 times the direct medical costs, twice the hospitalization rate, and 10 times the work disability rate of an age and sex-matched population.<sup>6</sup>

### Rheumatoid arthritis

RA is a systemic disease marked by inflammatory changes in synovial membranes and articular structures that lead to widespread degeneration of collagen fibers and destruction of bony structures.<sup>7</sup> A small number of patients have mild disease associated with spontaneous remission,<sup>1</sup> but most experi-

ence a chronic, fluctuating course of disease that, despite therapy, may result in progressive joint destruction, deformity, disability, and even premature death.<sup>6</sup> RA affects women more frequently than men (5:1), has a peak incidence between the ages of 20 and 50 years, and has a prevalence of 1% to 2% in adults.<sup>1</sup>

### Osteoarthritis

OA is a degenerative disease that is the result of mechanical and biological events affecting joint cartilage and underlying bone. Although it may be initiated by multiple factors (e.g., repetitive trauma, genetic factors, and metabolic factors), the end result is a breakdown of cartilage and changes in the underlying bone, and the consequences are joint pain, tenderness, limitation of movement, occasional swelling, and varying degrees of inflammation.<sup>8</sup> OA is seen most often in older individuals, but it may also occur in younger people following injury or repetitive stress. More than 80% of people older than 75 have clinical OA and more than 80% of those older than 50 have radiologic evidence of OA.<sup>1</sup>

### Pain Associated With Arthritis

Pain is “an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.”<sup>9</sup> This definition of pain, formulated by the Interna-

tional Association for the Study of Pain in 1979, remains the most widely used definition today. It emphasizes that pain is a complex, multidimensional phenomenon.<sup>2</sup>

Pain has also been defined as “whatever the experiencing person says it is, existing whenever he or she says it does.”<sup>10</sup> This definition, also widely used, emphasizes that pain is a subjective experience with no objective measures. It stresses that the patient, not the clinician, is the authority on the pain and that his or her self-report is the most reliable indicator of pain.<sup>2</sup>

People with OA and RA experience acute and chronic pain. Acute arthritic pain should be approached in the same manner as other acute pain: attempt to remove or modify the underlying cause, administer indicated analgesics, and reduce patients’ fears that may exacerbate their pain. Chronic pain is more complex than acute pain because it includes interactions among the biological, psychological, and social factors that influence pain and function.<sup>1</sup>

The persistent pain, joint stiffness, and joint damage of arthritis produce substantial physical disability and have important social and psychological consequences. People with arthritis are often impaired in their abilities to engage in basic activities of daily living (e.g., dressing, eating, shopping, and doing household chores and social activities). Many also experience psychological effects such as helplessness, depression, and anxiety that can increase pain and disability. Recognition of the psychosocial impact of arthritis has raised awareness of the need to incorporate behavioral and psychosocial approaches into ongoing biomedical management of arthritis.<sup>8</sup>

The biopsychosocial model of arthritis pain and disability (Figure 1) provides a systems perspectives on arthritis. Changes in one part of the system can produce changes in another part of the system. For example, a biological change (increased disease activity) can lead to psychologic change (increased anxiety and depression) and social change (decreased ability to work or perform household chores), which in turn can

Acute pain is often short-lived with a specific cause and purpose and generally produces no persistent psychological reaction.

Chronic pain is distinctly different from and more complex than acute pain. It is characterized by pain that continues a month or more beyond the usual recovery period for an illness or injury or pain that goes on over months or years as a result of a chronic condition.

increase pain and disability.<sup>8</sup> For optimal management, clinicians must ascertain and address the various biological, psychological, and social contributions to patients' pain.<sup>1</sup>

### Exercise 1

Arthritis pain causes which of the following?

- Physical disability
- Social impairment
- Psychological effects
- All of the above

Answer on page 27.

## Pain Management in OA and RA: Nonpharmacologic Therapy

Although OA and RA are different diseases, many treatment principles are common to both. Patient education, weight control, physical exercise, cognitive-behavioral strategies, assistive devices, and surgery are used in both conditions.

### Patient Education

The importance of patient education interventions in pain management cannot be overemphasized. Studies have shown that patient education programs alone (especially those associated with actual practice of self-management and coping strategies) notably improve overall pain management.<sup>11</sup> OA and RA patients who participate in self-management programs such as the Arthritis Foundation Self-Management Program report decreases in joint pain and frequency of arthritis-related physician visits, increases in physical activity, and overall improvement in quality of life.<sup>12</sup>

Patient education programs are both effective and cost-effective.<sup>1,5</sup> Patient education and, where appropriate, education of the patient's family, friends, and other caregivers, should thus be an integral part of the arthritis management plan.<sup>13</sup> The most effective education plans attempt to modify patients' behavior and help them understand their disease, make informed decisions about therapy, and adhere to treatment plans.<sup>5</sup> Comprehensive patient education programs include instruction on the following<sup>1</sup>:

- Joint anatomy and arthritis
- Self-help principles

- Using joints wisely; conserving energy
- Pain management
- Exercise
- Relaxation
- Medications and their effects
- Psychological aspects; problem solving
- Clinician-patient relations
- Good nutritional habits
- Methods of heat/cold application
- Identification of unproven remedies

Patients can be referred to community-based education programs in many areas. In addition, the Arthritis Foundation publishes educational brochures and videotapes for patients and, in many communities, offers courses that teach practical techniques to reduce pain and improve function and general health.<sup>14</sup>

### Cognitive-Behavioral Therapy (CBT)

CBT is designed to reduce pain and psychological disability and to enhance pain-coping strategies. It provides a systematic approach for patients to learn pain-coping skills and involves a structured program of clinician instruction, guided practice, and mastery experiences. The goal of CBT is to help people better manage pain by changing the thoughts, feelings, and behaviors that influence their pain.<sup>1,2</sup>

CBT combines cognitive therapy techniques (e.g., attention diversion) with behavioral techniques (e.g., relaxation, assertiveness training). The two major subtypes of CBT are cognitive restructuring and coping skills. In cognitive restructuring, patients are taught to monitor and evaluate negative thoughts. The goal is to generate more accurate and adaptive thoughts. Training in coping skills includes relaxation and imagery techniques, adaptive coping self-statements, and group psychotherapy. Training in coping skills is directed at helping patients develop skills to manage pain and stress.<sup>1,2</sup>

### Exercise

The role of exercise in arthritis management has changed over time. In the past, patients were encouraged to rest, avoid vigorous activities, and perform only range-of-motion and isometric exercises. Repetitive, vigorous exercise was assumed to damage tissues and increase fatigue.<sup>1</sup> However, research has shown that regular, dynamic, even aerobic exercise does not exacerbate

pain or disease progression in OA and does not increase fatigue or joint symptoms in RA.<sup>6,14</sup>

Protecting joints from pathologic stress and increasing rest during periods of disease activity are important components of good care. But for people with arthritis, prolonged inactivity only exacerbates the problems associated with their condition, namely pain, stiffness, loss of motion, weakness, functional limitations, poor health, and disability.<sup>1</sup> Regular exercise improves joint mobility, muscle strength, aerobic fitness and function. It also reduces pain, fatigue, depression and contributes to psychological well-being.<sup>1,6</sup> Appropriate regular exercise should be an integral component of arthritis management.

### Weight Control

Several large, long-term studies have shown that obesity increases the risk for OA.<sup>15-18</sup> Research has also shown that weight reduction reduces pain, further supporting the relationship between obesity and pain.<sup>19</sup> The nature of the relationship is unclear, however. It has been suggested that excessive body weight increases stresses on weight-bearing joints. Preliminary data from a small number of clinical trials, however, suggest that the relevant factors may be body fat and muscle strength, not simply weight. This suggests that interventions that strengthen muscles and reduce body fat may be effective methods for reducing pain and improving function.<sup>14</sup>

Guidelines for arthritis management recommend that patients should be advised to maintain an ideal body weight.<sup>1,4,5,13,14</sup> If a patient's body mass index is greater than 25, they are considered clinically overweight and recommendations to follow a weight management program are indicated.

### Physical Modalities

Physical interventions including heat, cold, electrotherapy, and acupuncture are used for conditions such as arthritis and are aimed at decreasing impairment and improving function. Arthritis is chronic and variable and, as stated previously, self-management notably improves overall pain management. Patients should therefore be encouraged to learn pain relief measures they can

use independently in addition to or in combination with exercise and medication. Expectations should be realistic, however: relief of arthritis-related pain by passive means, such as application of heat or cold or electrotherapy, is short-lived.<sup>1</sup>

### Surgery

Surgery should be considered in patients who have unacceptable levels of pain, loss of range of motion, or limitation of function because of structural joint damage. For optimal results, people with disabling arthritis should be referred for surgical care before the onset of joint contracture, severe deformity, and advanced muscular wasting and deconditioning, rather than as a last resort.<sup>1,6,13</sup>

#### Exercise 2

Why are patient education programs integral to pain management?

- a. They teach patients how to take their medication
- b. They increase arthritis-related visits
- c. They improve overall pain management
- d. None of the above.

Answer on page 27.

#### Exercise 3

What is the role of regular exercise for patients with arthritis patients?

- a. It is something that should be avoided.
- b. It will exacerbate pain and joint symptoms.
- c. It reduces fatigue, pain, and depression.
- d. It has no positive or negative effect

Answer on page 27.

### Pain Management in OA and RA: Pharmacologic Therapy

Analgesic and anti-inflammatory medications are important in arthritis pain management but should be used concurrently with nonpharmacologic (educational, physical, and cognitive-behavioral) interventions. In addition to analgesics and anti-inflammatory medications, glucosamine sulfate has been shown to be effective for pain management in OA.

No currently available pharmacologic agents prevent or delay the progression of structural damage in OA.<sup>7</sup> Therapy for OA is largely palliative: primary goals are to relieve joint pain, reduce inflam-

mation, and increase physical function.<sup>7</sup> Disease-modifying drugs are currently only available for RA. Additional treatment goals in RA therefore, include controlling systemic inflammation and slowing disease progression through the use of disease-modifying antirheumatic drugs (DMARDs).<sup>7</sup>

### DMARDs in RA

RA is a systemic, inflammatory, and erosive disease that can cause substantial joint damage.<sup>1</sup> Most patients with RA should be started on DMARD therapy within 3 months of diagnosis. DMARDs commonly used in RA are listed in Table 1.<sup>6</sup>

DMARDs may delay disease progression or alter the natural history of RA, and they have been shown to be effective in decreasing chronic pain.<sup>1</sup> DMARDs do not, however, cure RA, and RA management is thus an iterative process. Patients should be periodically reassessed for evidence of disease activity or progression and for any side effects of treatment. Repetitive flares, unacceptable disease activity (i.e., ongoing disease activity after 3 months of maximum therapy), or progressive joint damage should prompt reassessment of the DMARD regimen.<sup>6</sup>

There is a high potential toxicity with some of the DMARDs. Frequent clinician visits and blood and urine monitoring are required to ensure safe use of some DMARDs. Clinicians and patients should balance the effectiveness of these agents with their costs, the surveillance required, and the therapy needed if a toxic event occurs.<sup>1</sup>

#### Exercise 4

Which of the following is a characteristic of disease-modifying antirheumatic drugs (DMARDs)?

- a. They delay disease progression in OA.
- b. They are well tolerated by arthritis patients.
- c. They should only be used after nonsteroidal anti-inflammatory drugs and coxibs have been tried first.
- d. None of the above.

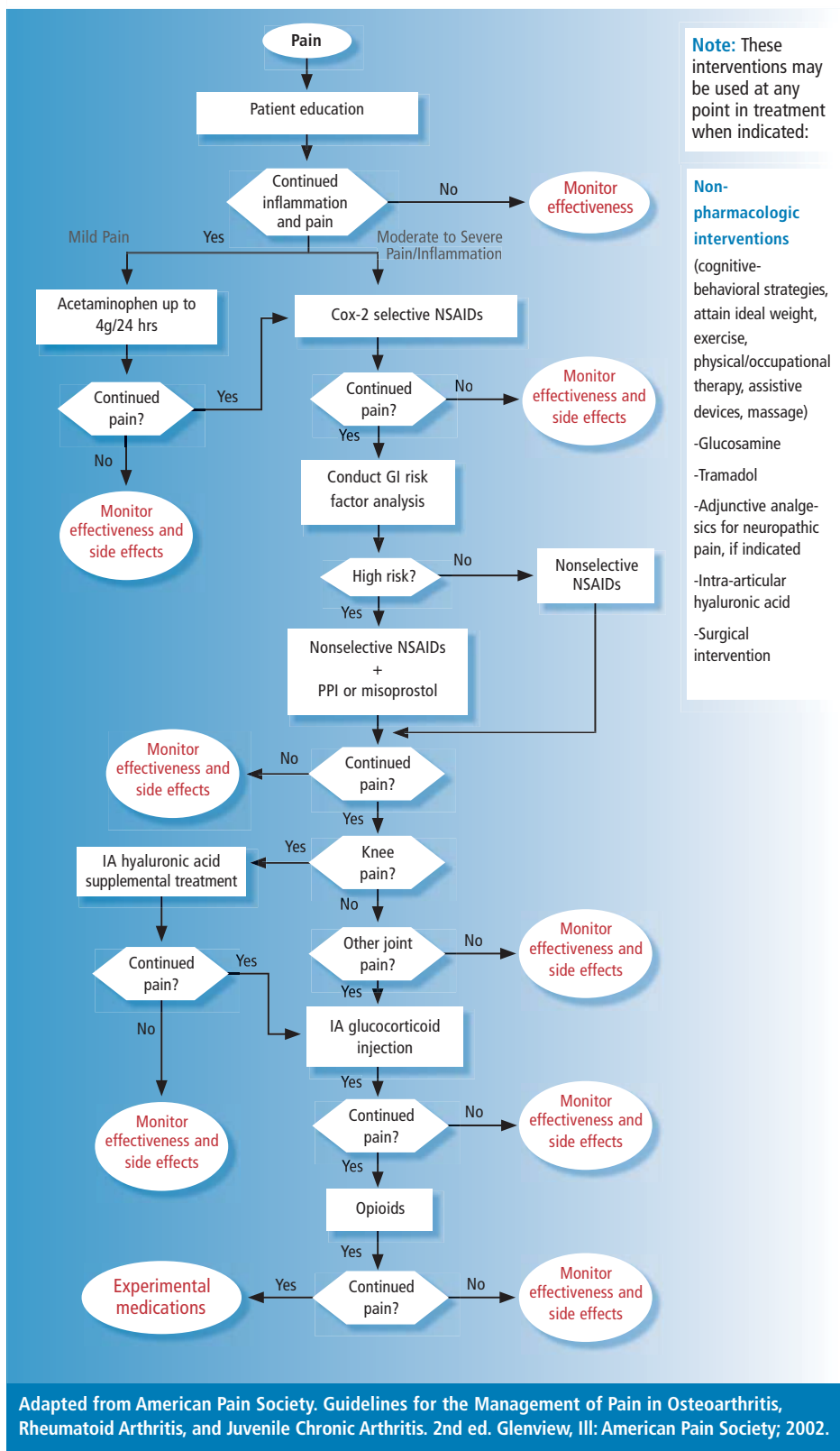
Answer on page 27.

**TABLE 1. DMARDs (DISEASE-MODIFYING ANTIRHEUMATIC DRUGS) COMMONLY USED IN RHEUMATOID ARTHRITIS (RA)**

Drug	Approximate time to benefit
Hydroxychloroquine	2-6 months
Sulfasalazine	1-3 months
Methotrexate	1-2 months
Leflunomide	4-12 weeks
Etanercept	Few days to 12 weeks
Infliximab + oral and methotrexate, subcutaneous	Few days to 4 months
Azathioprine	2-3 months
D-penicillamine	3-6 months
Gold, oral	4-6 months
Gold, intramuscular	3-6 months
Minocycline	1-3 months
Cyclosporine	2-4 months
Staphylococcal protein A immunoadsorption	3 months

From American College of Rheumatology Subcommittee on Rheumatoid Arthritis Guidelines. Guidelines for the management of rheumatoid arthritis: 2002 update. *Arthritis Rheum.* 2002;46:328-346

**FIGURE 2. ALGORITHM FOR MANAGEMENT OF PAIN IN OSTEOARTHRITIS**



**Note:** These interventions may be used at any point in treatment when indicated:

- Non-pharmacologic interventions**  
(cognitive-behavioral strategies, attain ideal weight, exercise, physical/occupational therapy, assistive devices, massage)
- Glucosamine
  - Tramadol
  - Adjunctive analgesics for neuropathic pain, if indicated
  - Intra-articular hyaluronic acid
  - Surgical intervention

Adapted from American Pain Society. Guidelines for the Management of Pain in Osteoarthritis, Rheumatoid Arthritis, and Juvenile Chronic Arthritis. 2nd ed. Glenview, Ill: American Pain Society; 2002.

**Acetaminophen**

For persons with OA, the simple analgesic acetaminophen is the medication of first choice for mild pain, however there is little evidence that acetaminophen provides any benefit when

peripheral inflammation is a causative factor for the pain.<sup>1,13</sup>

In RA, acetaminophen may be used as a concomitant medication (with DMARDs) for mild pain. However, because RA is an

inflammatory disease, many more patients will benefit from concomitant therapy with an anti-inflammatory agent.<sup>1</sup> The daily dose of acetaminophen should not exceed 4 g.<sup>1</sup> Although acetaminophen is generally safe, it can cause chronic interstitial nephritis and hepatic damage in those who take large amounts or have underlying disease.<sup>22</sup> The American Pain Society guidelines state that “the favorable risk-to-benefit ratio for acetaminophen in patients with mild pain who derive benefit warrants the continued use of acetaminophen.” It should be noted that there is a risk for both gastrointestinal (GI) and hepatotoxicity with all over-the-counter (OTC) analgesics and nonsteroidal anti-inflammatory drugs (NSAIDs) when combined with routine heavy alcohol use. In patients who consume more than 2 oz. of alcohol per day, the maximum dose of acetaminophen should be decreased to 2.5 g per 24 hours.

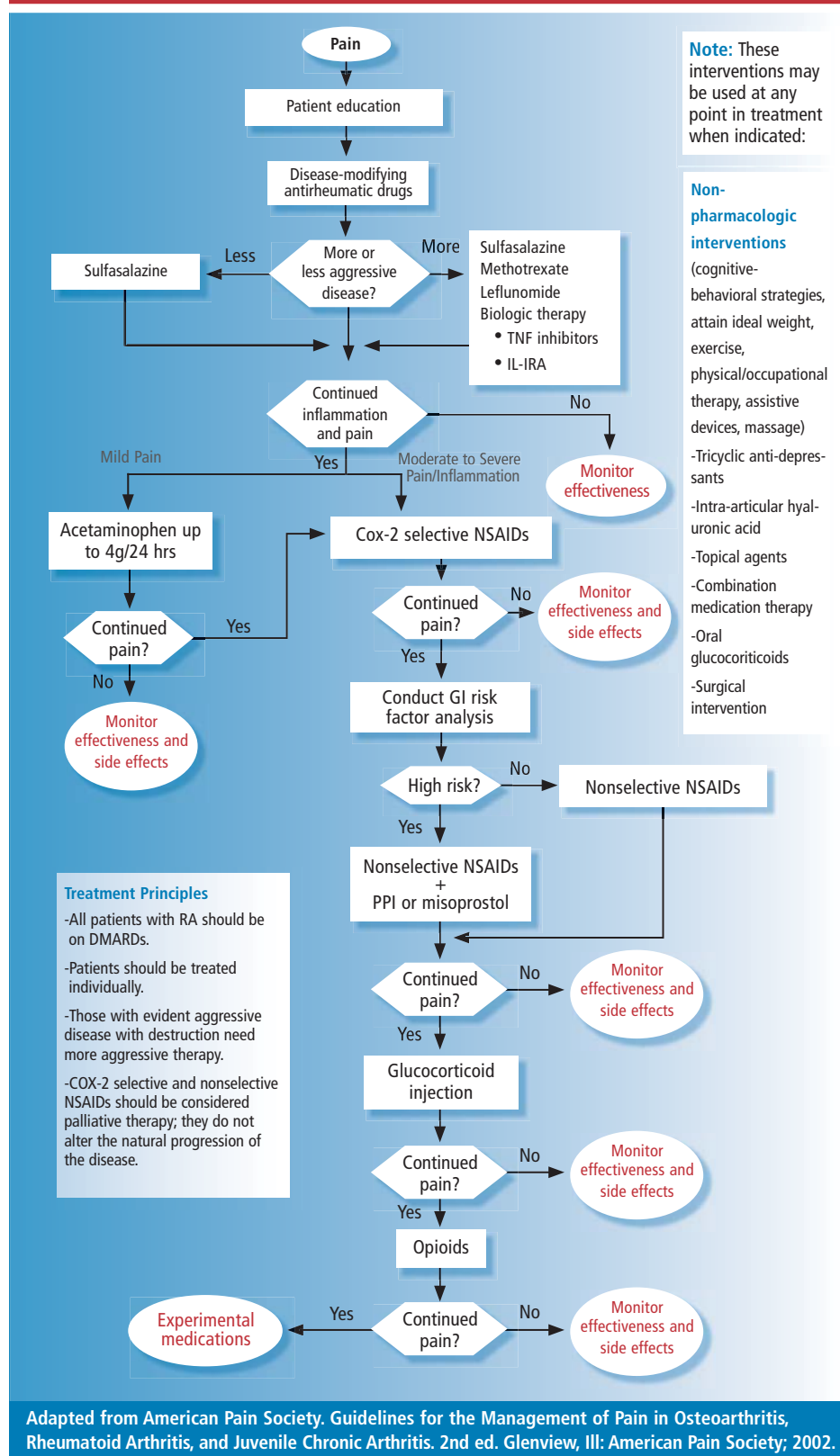
**NSAIDs**

Nonselective NSAIDs are a mainstay of medical treatment for arthritis, owing to their well-established anti-inflammatory and analgesic effects. Nonselective NSAIDs account for more than 70 million annual prescriptions, and more than 30 billion OTC tablets are sold every year in the United States.<sup>23</sup>

NSAIDs are associated with adverse GI effects ranging from mild dyspepsia to serious, potentially fatal complications such as bleeding peptic ulcer. Although the probability is low that any individual NSAID user will experience a drug-related complication, the fact that millions of Americans use these agents on a regular basis makes nonselective NSAID-related gastropathy an important problem from both clinical and economic perspectives.<sup>23</sup>

A database of 36,000 RA patients indicates that 1.3 serious GI complications occur for every 100 patient-years of NSAID use. Based on these data, in the United States an estimated 100,000 hospitalizations and 10,000 to 20,000 deaths can be attributed to complications related to prescription nonselective NSAIDs each year.<sup>23</sup> Additionally, in January of 2003, the National Consumers League reported results from a consumer survey which revealed that one-half (47%) of adults who most often take

**FIGURE 3. ALGORITHM FOR MANAGEMENT OF PAIN IN RHEUMATOID ARTHRITIS**



caution in this patient population.<sup>23</sup> It should also be pointed out that patients with RA are nearly twice as likely as patients with OA to experience a serious complication from NSAID treatment.<sup>6</sup> Risk factors for GI and renal toxicity in patients treated with nonselective NSAIDs are listed in Table 2.

Strategies to prevent NSAID-related gastropathy are listed in Table 3. Gastroprotective agents are often used to prevent the GI adverse effects of nonselective NSAID therapy. Gastroprotective agents, however, are not completely effective in prophylaxis and treatment of NSAID-related GI events, may have their own side effects, and can contribute substantially to the costs of treatment.<sup>23</sup>

**Celecoxib**

Celecoxib has demonstrated notable reduction in OA joint pain compared with placebo. At doses of 100 mg BID or 200 mg BID the effectiveness of celecoxib was shown to be similar to that of naproxen 500 mg BID. A total daily dose of 200 mg has been shown to be equally effective whether administered as 100 mg BID or 200 mg BID. In RA, celecoxib has demonstrated substantial reduction in joint tenderness/pain and joint swelling compared to placebo. Doses of 100 mg BID and 200 mg BID were similar in effectiveness and both were comparable to naproxen 500 mg BID.<sup>28</sup>

**Rofecoxib**

Rofecoxib has demonstrated notable reduction in OA joint pain compared with placebo. At doses of 12.5 mg and 25 mg once daily, efficacy was comparable to that of ibuprofen 800 mg TID and diclofenac 50 mg TID. In RA, rofecoxib demonstrated substantial reduction of joint tenderness/pain and joint swelling compared with placebo. Rofecoxib 25 mg once daily and naproxen 500 mg twice daily showed generally similar effects in the treatment of RA.<sup>29</sup>

**Valdecoxib**

Valdecoxib was shown to be superior to placebo in improvement in 3 domains of OA symptoms: the WOMAC osteoarthritis index (a composite of pain, stiffness, and functional measures

over the counter NSAIDs sometimes take more than the recommended dose. Data from epidemiologic studies published in the 1980s and 1990s show that among persons >65 years old, 20% to 30% of all hospitalizations and deaths due to peptic

ulcer disease were attributable to NSAID therapy.<sup>13,21,24-26</sup> Studies also showed that, in the elderly, the risk of a catastrophic GI event in patients taking NSAIDs was dose dependent.<sup>13,24</sup> These agents should be used with particular

in OA), the overall patient assessment of pain, and the overall patient global assessment. Two pivotal three-month trials in OA generally showed changes statistically significantly different from placebo and comparable to the naproxen control. In RA, celecoxib demonstrated substantial reduction compared to placebo in the signs and symptoms of RA, as measured by the American College of Rheumatology 20 improvement index. Efficacy was similar to that of naproxen 500 mg BID.<sup>30</sup>

Whether nonselective NSAIDs or coxibs should be the first choice for anti-inflammatory medications in arthritis remains a contentious issue. The American College of Rheumatology Guidelines for the Management of RA state that numerous studies have shown coxibs to be associated with lower rates of discontinuations, less need for concomitant use of gastroprotective agents, less need for GI procedures, and lower risk of developing perforations, ulcers, and bleeds. They also point out that the coxibs available at the time the guidelines were written (rofecoxib and celecoxib) are no more effective than nonselective NSAIDs and may cost up to 15 to 20 times more per month than generic NSAIDs.<sup>6</sup>

The American College of Rheumatology guidelines suggest that the choice of agents must be based on a combination of considerations of efficacy, safety, convenience, and cost.<sup>6,7,31</sup>

American Pain Society guidelines for pain management in OA and RA (Figure 2 and Figure 3), on the other hand, recommend coxibs as first-choice anti-inflammatory medications over nonselective NSAIDs, unless clear risk factors contraindicate the usage of coxibs. In OA, this means that for a person with moderate to severe pain and/or inflammation, a coxib is the first choice unless there is notable risk for hypertension or renal disorder. In RA, the guidelines recommend the use of a coxib as a concomitant medication (with a DMARD) for persons with moderate to severe pain with or without inflammation, unless there are clear risk factors for exacerbation of renal disease or the medications are not tolerated because of GI complications.<sup>1</sup>

In general, contraindications to the coxibs are the same as those for conventional NSAIDs. These include patients with a history of asthma, urticaria or allergic reactions to NSAIDs or aspirin. Coxibs should be avoided in the third trimester of pregnancy, although their safety in the first and second trimesters has not yet been established and should be avoided.<sup>32</sup>

**Exercise 5**

Which of the following is *not* a risk factors for gastrointestinal (GI) toxicity in patients treated with nonsteroidal anti-inflammatory drugs (NSAIDs)?

- a. Age ≥65 years
- b. History of peptic ulcer disease
- c. Concomitant use of Tramadol
- d. Alcohol consumption

**Answer on page 27.**

**Topical agents**

Application of ointments and counterirritant rubs such as menthol, other liniments, and rubbing alcohol to painful joints and muscles is a common self-management practice. These preparations have a chemically produced counterirritant effect. Capsaicin, an enzyme found in hot peppers, achieves neuromodulatory effects. It is more effective than analgesic balms when the patient can use it long enough to become tolerant to the burning side effect. Controlled trials in patients with OA and RA found notable benefit in both conditions. Toxicity is minimal but local irritation is common, especially at the beginning of therapy.<sup>1</sup>

Topical NSAIDs (e.g., methylsalicylate) have also demonstrated efficacy in patients with OA.<sup>13</sup>

**Intra-articular injections**

Intra-articular glucocorticoids may be used in patients with intense flares of OA or RA as evidenced by high degrees of inflammation and effusion in the joint. They can be used at any time during the course of the illness.<sup>13</sup> A patient who has disease flare in only one or a few joints can be treated successfully by injecting those particular joint(s), without requiring a major change in the prescribed treatment regimen.<sup>6</sup> The effects are sometimes dramatic, although temporary. However, the improvement from an intra-articular injection of glucocorticoids helps to instill confidence in a discouraged patient that treatment can be effective in relieving pain and increasing function.

Synovial fluid hyaluronic acid (HA) is decreased in patients with OA. Replacement with synthetic or biologically derived HA is thought to diminish pain in OA of the knee. Injecting HA supplements into the knee may be considered in persons with OA and knee pain who are unresponsive to or unable to take acetaminophen, nonselective NSAIDs, and coxibs. HA can be administered at any time during the course of the illness.<sup>1,13</sup>

**Tramadol**

Tramadol, a centrally acting oral analgesic, is a synthetic opioid agonist that also inhibits reuptake of serotonin and norepinephrine. It is not a controlled substance and

**TABLE 2. RISK FACTORS FOR GASTROINTESTINAL (GI) AND RENAL TOXICITY IN PATIENTS TREATED WITH NONSTEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDS)<sup>13,17,21</sup>**

Risk Factors for Upper GI Bleeding	Renal Toxicity (risk factors for reversible renal T2 failure in patients with intrinsic renal disease (usually defined as serum creatinine >2.0 mg/dL). <sup>21,22</sup> )
Age ≥65 years	Age ≥65 years
History of peptic ulcer disease	Hypertension
History of upper GI bleeding	Congestive heart failure
Concomitant use of oral corticosteroids or anticoagulants	Concomitant use of angiotensin-converting enzyme inhibitors and diuretics
Cardiovascular disease	
Smoking	
Alcohol consumption	

reports of abuse are rare. Tramadol may be used alone or in combination with acetaminophen or NSAIDs for therapy at any time during the treatment of a patient with OA when NSAIDs alone produce inadequate pain relief.<sup>1,13</sup>

### Opioids

For patients with OA and RA, opioids, which have addictive potential, should be considered for short term use in patients with acute pain, or when other medications and nonpharmacologic interventions produce inadequate pain relief, and when pain affects the patient's quality of life.<sup>1</sup> A more detailed discussion of opioids is beyond the scope of this publication.

### Conclusion

The most common types of arthritis, OA and RA, are among the most prevalent chronic illnesses and leading causes of disability in the United States. Although

OA and RA are different diseases, many treatment principles are common to both.

First-line therapy is nonpharmacologic. Recommended interventions include patient education, cognitive-behavioral therapy, exercise, weight control and physical modalities such as the application of heat or cold, electrotherapy, and surgery.

Pharmacologic therapy is used in conjunction with nonpharmacologic interventions. DMARDs are available in RA, and the majority of RA patients should be started on DMARD therapy within 3 months of diagnosis. No currently pharmacologic agents available prevent or delay the progression of structural damage in OA.

A mainstay of pharmacologic therapy in arthritis is anti-inflammatory medication.

Today traditional (nonselective) NSAIDs and COX-2-selective inhibitors offer healthcare providers a wide choice of agents. ■

**TABLE 3. STRATEGIES TO PREVENT NONSTEROIDAL ANTI-INFLAMMATORY DRUG (NSAID)- RELATED GASTROPATHY<sup>23</sup>**

- Stop the NSAID
- Decrease the NSAID dosage
- Use a safer NSAID with similar efficacy
- Coprescribe a gastroprotective agent
  - Misoprostol
  - Histamine<sub>2</sub>-receptor antagonist
  - Proton pump inhibitor
- Use a non-NSAID analgesic

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## Answers

### Exercise 1

Arthritis pain causes which of the following?

- a. Physical disability
- b. Social impairment
- c. Psychological effects
- d. All of the above

**Answer: d.** The persistent pain, joint stiffness, and joint damage of arthritis produce substantial physical disability and have important social and psychological consequences. People with arthritis are often impaired in their abilities to engage in basic activities of daily living (e.g., dressing, eating, shopping, and doing household chores and social activities). Many also experience psychologic effects such as helplessness, depression, and anxiety, which can increase pain and disability.

### Exercise 2

Why are patient education programs integral to pain management?

- a. They teach patients how to take their medication
- b. They increase arthritis-related visits
- c. They improve overall pain management
- d. None of the above.

**Answer: c.** Studies have shown that patient education programs alone (especially those associated with actual practice of self-management and coping strategies) substantially improve overall pain management. OA and RA patients who participate in self-management programs such as the Arthritis Foundation Self-Management Program report decreases in joint pain and frequency of arthritis-related physician visits, increases in physical activity, and overall improvement in quality of life.

### Exercise 3

What is the role of regular exercise for patients with arthritis patients?

- a. It is something that should be avoided.
- b. It will exacerbate pain and joint symptoms.
- c. It reduces fatigue, pain, and depression.
- d. It has no positive or negative effect

**Answer c.** The role of exercise in arthritis management has changed over time. In the past, patients were encouraged to rest, avoid vigorous activities, and perform only range-of-motion and isometric exercises. But it has been shown that for people with arthritis, prolonged inactivity only exacerbates the problems associated with their condition, namely pain, stiffness, loss of motion, weakness, functional limitations, poor health, and disability. Regular exercise improves joint mobility, muscle strength, and aerobic fitness and function. It also reduces pain, fatigue, and depression and contributes to psychologic well-being. Appropriate regular exercise should be an integral component of arthritis management.

### Exercise 4

Which of the following is a characteristic of disease-modifying antirheumatic drugs (DMARDs)?

- a. They delay disease progression in OA.
- b. They are well tolerated by arthritis patients.
- c. They should only be used after nonsteroidal anti-inflammatory drugs and coxibs have been tried first.
- d. None of the above.

**Answer: d.** Most patients with RA should be started on DMARD therapy within 3 months of diagnosis. DMARDs may delay disease progression or alter the natural history of RA, and they have been shown to be effective in decreasing chronic pain. DMARDs do not, however, cure RA; thus, RA management is an iterative process. Patients should be periodically reassessed for evidence of disease activity or progression and for any side effects of treatment. The potential toxicity of some DMARDs is high. Frequent clinician visits and blood and urine monitoring are required to ensure safe use of some DMARDs.

### Exercise 5

Which of the following is not a risk factors for gastrointestinal (GI) toxicity in patients treated with nonsteroidal anti-inflammatory drugs (NSAIDs)?

- a. Age >65 years
- b. History of peptic ulcer disease
- c. Concomitant use of Tramadol
- d. Alcohol consumption

**Answer: c.** Following are risk factors for GI toxicity in patients treated with NSAIDs:

- Age >65 years
- History of peptic ulcer disease
- History of upper GI bleeding
- Concomitant use of oral corticosteroids or anticoagulants
- Cardiovascular disease
- Smoking
- Alcohol consumption

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